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**Rajinder Kaur**  
 Assistant Professor, Sri Guru  
 Granth Sahib World University  
 Fatehgarh Sahib, Punjab, India

## Sport specific training

**Rajinder Kaur**

### Abstract

Sport specific training is simply fitness and performance training designed specifically for athletic performance enhancement. Training programs for athletic performance enhancement could include such areas as strength, speed, power, endurance, flexibility, mobility, agility, mental preparedness (including goal setting), sleep, recovery/regeneration techniques and strategies, nutrition, rehabilitation, pre-habilitation, and injury risk reduction. A general program should include all of these components and a more specific program may only include a few, depending upon the athlete's specific needs (based on strengths, weaknesses and/or imbalances) and the demands of the sport they participate in(2). While there may be some sense of specificity to a program designed for an athlete of a specific sport, the truth is that there is a limit to the amount of application/carryover of a sports performance exercise to a sports skill. The most sports specific training that can be done is the sport itself. Sports specific skills practiced for the sport are as specific as one can get. Take Ice Hockey, for example: there are no exercises that can be performed in the weight room that are more specific to footballers than skating on the ice. The same is true for shooting the puck. However, while there are sports specific skills necessary for each sport, there are also physical skills necessary for each sport. Sports preparation is necessary for the sport specific skills (Kicking a football, pitching a baseball, etc.) and physical preparation is needed for specific performance enhancement such as foot speed, changing direction strength, power, etc. Sport specific training is simply fitness and performance training designed specifically for athletic performance enhancement. Training programs for athletic performance enhancement could include such areas as strength, speed, power, endurance, flexibility, mobility, agility, mental preparedness (including goal setting), sleep, recovery/regeneration techniques and strategies, nutrition, rehabilitation, pre-habilitation, and injury risk reduction. The actual term "plyometrics" was first coined in 1975 by Fred Wilt, the American Track and Field coach. The elements ply and metric come from Latin roots for "increase" and "measure" respectively, the combination thus means "measurable increase".

**Keywords:** Cyclist, cycling speed, core strength

### Introduction

To achieve the purpose of this study, a total of 30 ball game players from various institutions Baba Mehar Charitable trust, Bassi Academy, Bassi Pathana, aged group from 17-23 were selected as subjects Purposively. Further, the selected subjects have the training age of minimum 03 -05 yrs old.

### Selection of Variables

The investigator reviewed the available scientific literature pertaining to the problem under study from books, journals, magazines and research papers and also take in concentration of the feasibility criteria of the availability of instrument and relevance of the variable to the present study. The following variables were selected:

- Speed
- Agility

### Selection of Test

Primary concerned of this study was to see the effect of specific training on 30 various ball game players. As per the available literature the following standardized tests were used to collect the relevant data on the selected variable and these presented in the table 1.

**Corresponding Author:**  
**Rajinder Kaur**  
 Assistant Professor, Sri Guru  
 Granth Sahib World University  
 Fatehgarh Sahib, Punjab, India

**Table 1:** The following standardized tests were used to collect the relevant data on the selected variable

Variables	Name of the test	Unit of Measurement
Speed Agility	▪ T Test	Seconds
	▪ Illinois Agility Run	Seconds
	▪ 20 Meter Dash	Seconds

**Training Protocol**

A day before the commencement of experimental procedures, the subjects were assembled on the football Field. Proper instructions regarding the objectives of study and procedure to perform the protocol were demonstrated and the queries of the subjects if any, were solved graciously by the researchers. The researcher's carefully supervised and control the training sessions with their experiences.

Before the final commencement of the training protocol, the subjects were asked to warm up for 15 to 20 minutes.

Three Weeks training programme was planned for the experimental group. After the completion of the duration of three week, the data was again collected at the same time of training session of both experimental and controlled group. The training plan has been designed keeping in view the above mentioned variable (speed, agility). The Training sessions were organized thrice a week and twice a day i.e. morning and evening session.

**Administration of the test**

**Agility T-Test**

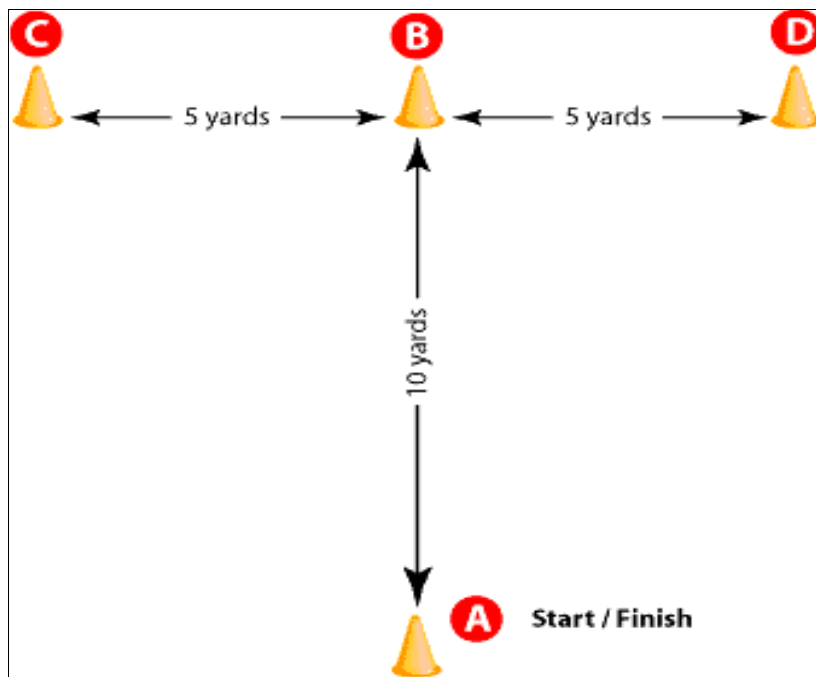
**Procedure:** Set out four cones as illustrated in the diagram above (5 yards = 4.57 m, 10 yards = 9.14 m). The subject

starts at cone A. On the command of the timer, the subject sprints to cone B and touches the base of the cone with their right hand. They then turn left and shuffle sideways to cone C, and also touches its base, this time with their left hand. Then shuffling sideways to the right to cone D and touching the base with the right hand. They then shuffle back to cone B touching with the left hand, and run backwards to cone A. The stopwatch is stopped as they pass cone A.

**Scoring:** The trial will not be counted if the subject cross one foot in front of the other while shuffling, fails to touch the base of the cones, or fails to face forward throughout the test. Take the best time of three successful trials to the nearest 0.1 seconds. The table below shows some scores for adult team sport athletes.

**Table 2:** The table below shows some scores for adult team sport athletes

	Male (seconds)	Female (seconds)
Excellent	<9.5	<10.5
Good	9.5 to 10.5	10.5 to 11.5
Average	10.5 to 11.5	11.5 to 12.5
Poor	>11.5	>12.5



**Fig I:** T agility test to measure the running agility of the players

**Administration of the test**

**Illinois agility test**

Agility is an important component of many team sports, though it is not always tested, and is often difficult to interpret results. The Illinois Agility Test (Getchell, 1979) [6] is a commonly used test of agility in sports, and as such there are many norms available.

**Procedure:** The length of the course is 10 meters and the width (distance between the start and finish points) is 5 meters. Four cones are used to mark the start, finish and the

two turning points. Another four cones are placed down the center an equal distance apart. Each cone in the center is spaced 3.3 meters apart. Subjects should lie on their front (head to the start line) and hands by their shoulders. On the 'Go' command the stopwatch is started, and the athlete gets up as quickly as possible and runs around the course in the direction indicated, without knocking the cones over, to the finish line, at which the timing is stopped.

**Results:** An excellent score is under 15.2 seconds for a male, less than 17 seconds for a female.

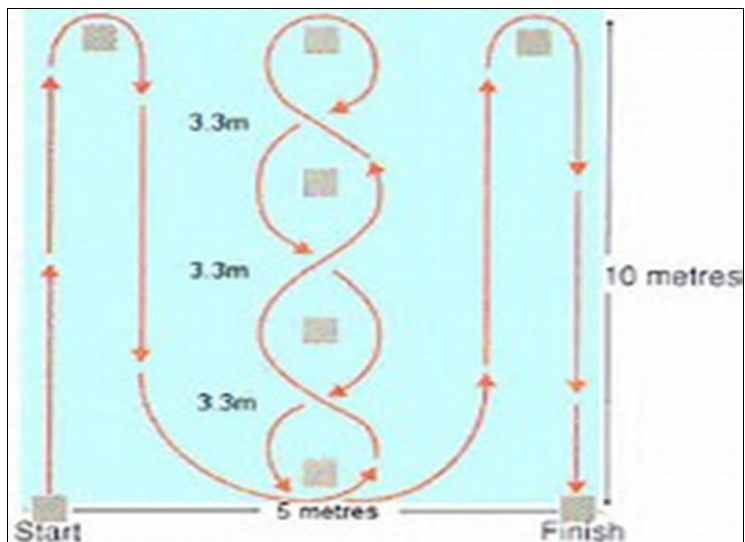


Fig 2: Illinois test to measure the running agility of the players

**20 meter Dash**

**Procedure:** The test involves running a single maximum sprint over 20 meters, with the time recorded. A thorough warm up should be given, including some practice starts and accelerations. Start from a stationary position, with one foot in front of the other. The front foot must be on or behind the starting line. This starting position should be held for 2 seconds prior to starting, and no rocking movements are allowed. The tester should provide hints to maximizing speed

(such as keeping low, driving hard with the arms and legs) and encouraged to continue running hard past the finish line.

**Results**

Two trials are allowed, and the best time is recorded to the nearest 2 decimal places. The timing starts from the first movement (if using a stopwatch) or when the timing system is triggered, and finishes when the chest crosses the finish line and/or the finishing timing gate is triggered.

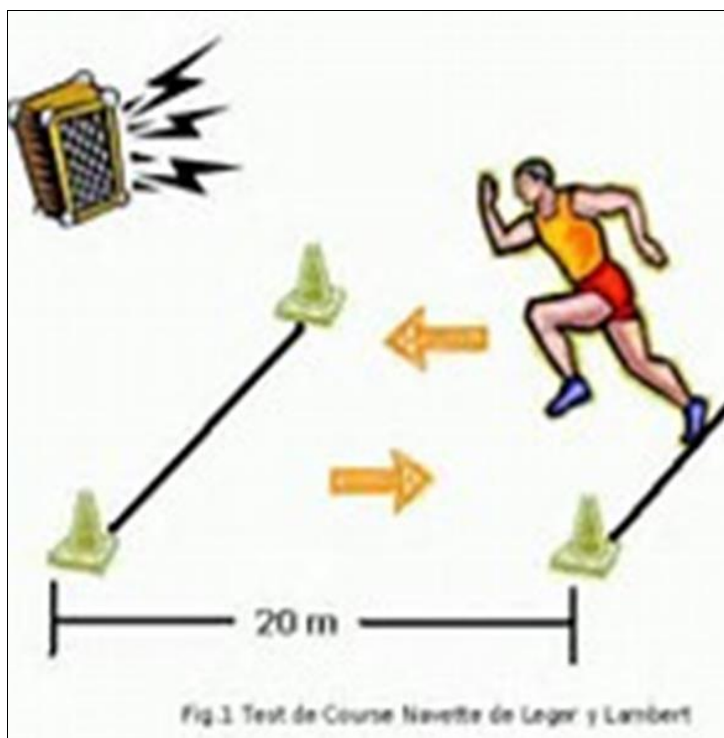


Fig 3: Test to measure the speed of the players

**Statistical analysis**

The present investigation was carried out to see the specific training programme on speed and agility among the players of

selected ball games. The obtained data was analyzed by applying paired t test and Independent t- statistics at the level of significance 0.05.

**Table 1:** Descriptive Statistics of Pre and Post Test of the Control Group with the Specific Training Programme on Speed and Agility among the Players

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre	14.04	15	0.50	0.12
	Post	14.18	15	0.56	0.14

Table 1 shows the descriptive statistics of the specific training on agility and speed, as the mean  $\pm$  standard deviation are

14.04  $\pm$  0.50 and 14.18  $\pm$  0.56 respectively with the number of subjects in each group N=15.

**Table 2:** Paired t statistics of Pre and Post Test of the Control Group with the Specific Training Programme on Speed and Agility among the Players

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		T	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Pre – Post	.14	.35	.09	-.33	.05	1.545	14	.145

Table 2 reveals that an insignificant difference was found in the pre and post test of the T agility test for the specific training program on agility and speed, as the t value is 1.545

which is higher than tabulated value (2.038) at degree of freedom 14, 1. The Sig. value is 0.145, which is higher than 0.05 at 5% level of significance.

**Table 3:** Descriptive Statistics of Pre and Post Test of the Experimental Group with the Specific Training Programme on Speed and Agility among the Players

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre	13.41	15	1.30	0.32
	Post	11.13	15	0.34	0.42

Table 1 shows the descriptive statistics of the specific training on agility and speed, as the mean  $\pm$  standard deviation are

13.41  $\pm$  1.30 and 11.13  $\pm$  0.34 respectively with the number of subjects in each group N=15.

**Table 4:** Paired t statistics of Pre and Post Test of the Experimental Group with the Specific Training Programme on Speed and Agility among the Players

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Pre – Post	.56	.11	.34	3.21	4.31	0.231	14	.000

Table 2 reveals that a significant difference was found in the pre and post-test of the agility test for the specific training program on agility and speed, as the t value is 0.231 which is higher than tabulated value (2.038) at degree of freedom 14, 1. The Sig. value is 0.000, which is less than 0.05 at 5% level of significance.

### Discussion of finding

The purpose of the study was to find the effect of specific training on speed, agility among selected ball game players. Thirty ball game players were purposely selected from Mehar Baba Charitable Trust, and their age ranged between 15 to 20 years. The selected players were divided into two equal groups consists of 15 players each namely experimental group and control group. The experimental group underwent a specific training programme for three weeks. The control group was not taking part in any training during the course of the study. Agility was assessed by T agility test and Illinois test and speed was assessed by 20meter dash test. Pre-test was taken before the training period and post- test was measured immediately after the three weeks training period. Statistical paired Test and Independent Test was used to analyze the means of the pre-test and post test data of experimental group and control group. The results revealed that there was a significant difference found on speed and agility. This difference found due to specific training given to the experimental group on speed and agility with compared to controlled group. This difference was also occurred due to the reason that the training schedule was on regular basis without any breaks continuously. The difference was also found due to the similarity in the age group of selected ball game players. The difference was also occurred due to the same timing of training schedule on regular basis to these selected ball game players.

Similar study was also conducted by the Jovanovic et al., (2011) [7] suggest a tendency for emphasis on non-specific endurance and power training and less emphasis on agility.

They also argue that this may be a cause for overtraining in soccer, as coaches do not recognise the importance of agility training. Clearly this is something that needs to be addressed in the research literature on soccer, specifically how SAQ training could improve agility, but also the extent to which this form of training should make up typical training regimens. The specific programme used in this study demonstrated benefits for agility performance but what are the long-term costs and/or benefits of such training? One might hypothesise that on the ball training has advantages for both skill development and would have motivational benefits over and above similar training without a ball. This may well result in improvement of players' performances during matches in specific situations as well as decreasing rather increasing the risks of overtraining.

S Parimalam and Dr. A. Pushparajan (2008) [5] also conducted a study on specific training and traditional method of training produced improvements in agility, explosive power and passing ability of inter- collegiate women basketball players. Agility: The basketball specific training group and traditional method of training group significantly improved the agility from pre-test to post test. The agility increased in basketball specific training group from pre-test (52.98 $\pm$ 4.22) to post test (48.50 $\pm$ 3.76); traditional method of training group from pre-test (53.08 $\pm$ 3.72) to post test (51.58 $\pm$ 3.39), the agility significantly improved pre-test to post test in all the two experimental groups with no change in control group.

Also a Similar study was conducted by the Michael G. Miller et.al (2006) [8] found that the plyometric training can improve the athlete's agility. Explosive Power: The basketball specific training group and traditional method of training group significantly improved the explosive power from pre-test to post test. The explosive power increased in basketball specific training group from pre-test (3.27 $\pm$ 0.24) to post test (5.06 $\pm$ 0.41); traditional method of training group from pre-test (3.18 $\pm$ 0.27) to post test (4.26 $\pm$ 0.34), the explosive power significantly improved pre-test to post-test all the two

experimental groups with no changes in control group. The methodology, nature, procedure and analysis of data used in the above said studies were also adopted in the present study, which support the study.

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